

In re Patent Application of:

BAHL ET AL

Serial No. **10/050,642**

Filed: **JANUARY 16, 2002**

In the Claims:

1. (Currently Amended) A method of supplying power to a load comprising the steps of:

(a) coupling output ports of a plurality of power supplies to an output node that is arranged to be coupled to said load;

(b) controlling one of said power supplies so as to supply to said output node a regulated output voltage that is sufficient to meet current demand of said load; and

(c) controlling another of said power supplies so as to cause the continuous flow of a reduced current therefrom to said output node less than said current demand of said load without an interruption in the continuous supply of current to said load, but sufficient to enable said another power supply to supply said output voltage that is sufficient to meet said current demand of said load in the event of an inability of said one of said power supplies to supply said regulated output voltage that meets said current demand of said load; and wherein

step (a) comprises coupling the output port of said another of said plurality of power supplies to said output node through a diode, and wherein step (c) comprises controlling said reduced continuous current flow from said another of said plurality of power supplies to said output node in accordance with the voltage drop across said diode, and

step (c) comprises coupling a voltage drop across said diode to an operational amplifier circuit that is configured to compare said voltage drop with a prescribed voltage reference and, in response to said voltage drop being less than said reference voltage, supplying a feedback control signal to said another of said power supplies that is effective increase its output voltage sufficiently to forward bias said diode; and further including the step of:

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(d) comparing the voltage at the output port of said another of said plurality of power supplies with a further reference voltage and, in response to said voltage exceeding said further reference voltage, controlling said feedback signal so that the output voltage of said another of said plurality of power supplies is regulated in accordance with the voltage at said output node.

2. (Cancel)

3. (Cancel)

4. (Cancel)

5. (Cancel)

6. (Currently Amended) A method of supplying power to a load comprising the steps of:

(a) diode-ORing output ports of redundant regulated power supplies to an output node that is arranged to be coupled to said load, so that one of said redundant regulated power supplies provides said output node with a regulated output voltage that is sufficient to meet current demand of said load; and

(b) monitoring the voltage drop across a diode that diode-ORs the output port of another of said redundant regulated power supplies to said output node, and providing a reduced continuous current flow from said another of said redundant regulated power supplies through said diode to said output node in accordance with the monitored voltage drop across said diode so as to enable said another of said redundant regulated power supplies to supply said regulated output voltage that is sufficient to meet the current demand of said load without an interruption in the supply of current to said load in the event of an inability of said one of said redundant regulated power supplies to supply a regulated

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output voltage that meets the current demand of said load; and
wherein

(b) further comprises coupling a voltage drop across said diode to an operational amplifier circuit that is configured to compare said voltage drop with a prescribed voltage reference and, in response to said voltage drop being less than said reference voltage, supplying a feedback control signal to said another of said redundant regulated power supplies that is effective increase its output voltage sufficiently to forward bias said diode; and further including the step of :

(c) comparing the voltage at the output port of said another of said redundant regulated power supplies with a further reference voltage and, in response to the voltage at the output port of said another of said redundant regulated power supplies exceeding said further reference voltage, controlling said feedback signal so that the output voltage of said another of said redundant regulated power supplies is regulated in accordance with the voltage at said output node.

7. (Cancel)

8. (Cancel)

9. (Cancel)

10. (Cancel)

11: (Currently Amended) A power supply system comprising redundant regulated power supplies, outputs of which are diode-ORed to an output node arranged to be coupled to a load, with one of said redundant regulated power supplies outputting a regulated output voltage that is sufficient to meet current demand of said load, each power supply having an associated monitoring circuit

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that monitors the voltage drop across its OR-ing diode, and wherein the monitoring circuit for another of said redundant regulated power supplies, other than said one of said redundant regulated power supplies, controls its operation so that said another power supply provides a reduced continuous current flow through its diode to said output node that is less than the current demand of the load, but is sufficient to continuously forward bias said diode so as to enable said another of said redundant regulated power supplies to supply said regulated output voltage that is sufficient to meet the current demand of said load without an interruption in the supply of current to said load in the event of an inability of said one of said redundant regulated power supplies to supply a regulated output voltage that meets the current demand of said load, and wherein

said monitoring circuit for another of said redundant regulated power supplies comprises an operational amplifier circuit coupled to compare a voltage drop across said diode with a prescribed voltage reference and, in response to said voltage drop being less than said reference voltage, to supply a feedback control signal to said another of said redundant regulated power supplies that is effective increase its output voltage sufficiently to forward bias said diode; and wherein

said operational amplifier circuit is further coupled to compare the voltage at the output port of said another of said redundant regulated power supplies with a further reference voltage and, in response to the voltage at the output port of said another of said redundant regulated power supplies exceeding said further reference voltage, to control said feedback signal so that the output voltage of said another of said redundant regulated power supplies is regulated in accordance with the voltage at said output node.

12. (Cancel)

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13. (Cancel)

14. (Currently Amended) A system for supplying power to a load comprising:

redundant regulated power supplies having output ports thereof diode-ORed to an output node that is arranged to be coupled to said load, one of said redundant regulated power providing said output node with a regulated output voltage that is sufficient to meet current demand of said load; and

a circuit coupled to monitor the voltage drop across a diode which diode-ORs the output port of another of said redundant regulated power supplies to said output node, and being operative to control the operation of said redundant regulated power supplies, so as to provide a reduced continuous current flow from said another of said redundant regulated power supplies through said diode to said output node in accordance with the monitored voltage drop across said diode so as to enable said another of said redundant regulated power supplies to supply said regulated output voltage that is sufficient to meet the current demand of said load without an interruption in the supply of current to said load in the event of an inability of said one of said redundant regulated power supplies to supply a regulated output voltage that meets the current demand of said load; and wherein

said monitor circuit comprises an operational amplifier circuit coupled to compare a voltage drop across said diode with a prescribed voltage reference and, in response to said voltage drop being less than said reference voltage, to supply a feedback control signal to said another of said redundant regulated power supplies that is effective increase its output voltage sufficiently to forward bias said diode, and wherein

said operational amplifier circuit is further coupled to compare the voltage at the output port of said another of said

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redundant regulated power supplies with a further reference voltage and, in response to the voltage at the output port of said another of said redundant regulated power supplies exceeding said further reference voltage, to control said feedback signal so that the output voltage of said another of said redundant regulated power supplies is regulated in accordance with the voltage at said output node.

15. (Cancel)

16. (Cancel)

17. (Cancel)

18. (Cancel)

19. (Previously Canceled)

20. (Previously Amended) A circuit for monitoring the output of a regulated power supply comprising:

a diode coupled between the output of said regulated power supply and an output node adapted to be coupled to a load;

an operational amplifier circuit coupled to compare a voltage drop across said diode with a prescribed reference voltage and, in response to said voltage drop being less than said reference voltage, to supply a feedback control signal to said regulated power supply that is effective increase its output voltage sufficiently to forward bias said wherein said operational amplifier circuit is further coupled to compare the voltage at the output of said regulated power supply with a further reference voltage and, in response to the voltage at the output of said regulated power supply exceeding said further reference voltage, to control said feedback signal so that the

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output voltage of said regulated power supply is regulated in accordance with the voltage at said output node.

21. (Cancel)